

الآية

(عَلَّمَ الْإِنْسَانَ مَا لَمْ يَعْلَمْ)

سورة العلق الآية (5)

## **DEDICATION**

This project is dedication to the soul of the parents. May Allah have mercy upon them and forgive their sins. And to the hard working parents .May Allah bless them with peace and prosperity . And for all people who pray for us.

## **ACNOLODGMENT**

TO Dr. Alfadil zakreya

mr. Ashraf

Eng.Muhammad Eisawy

And for anyone who gave us a helping hand

## المستخلص

أحدى التطبيقات المهمة في مجال نقل الكهرباء الشحن للأجهزة الالكترونية ، لقد قمنا بتصميم منظومة لتوليد الطاقة الكهربائية بإستخدام تقنية التحويل الميكانيكي لطاقة المشي لتوليد تيار كهربائي مباشر ، صممنا حذاء متعدد الاغراض حيث يمكنه شحن الأجهزة الالكترونية المحمولة مثل الهاتف النقال.

يقوم هذا العمل بنجاح بالإستفادة من طاقة الانسان أثناء الحياة اليومية من ما سيحسن من المستوى المعيشي في المستقبل القريب.

## **Abstract**

A major application of energy-harvesting technology is to power portable and wearable consumer electronics. We report a packaged power-generating insole with built-in flexible multi-layered triboelectric nanogenerators that enable harvesting mechanical pressure during normal walking. Using the insole as a direct power source, we develop a fully packaged selflighting shoe that has broad applications for display and entertainment purposes. Furthermore, a prototype of a wearable charging gadget is introduced for charging portable consumer electronics, such as cell phones. This work presents a successful initial attempt in applying energy-harvesting technology for self-powered electronics in our daily life, which will have broad impact on people's living style in the near future.

## TABLE OF CONTENTS

	Page No
الاية	i
DEDICATION	ii
ACKNOWLEDGMENT	iii
ABSTRACT	v
المستخلص	vi
TABLE OF CONTENTS	vii
LIST OF FIGURES	viii
LIST OF TABLES	ix
LIST OF ABBREVIATIONS	x
<b>CHAPTER ONE</b>	
<b>INTRODUCTION</b>	
1.1 Introduction	1
1.2 Problem Statement	1
1.3 Objectives	2
1.4 Methodology	2
1.5 Project Layout	2
<b>CHAPTER TWO</b>	
<b>CONSTRUCTION AND APPLICATIONS</b>	
2.1 Introduction	4
2.1.1 Piezoelectric shoes	4
2.1.2 Harvester Design	6
2.1.3 Piezo electric crystal	7
2.1.4 Rotary generator conversion shoes	8
2.1.4.1 <b>Rotary generation shoes proprieties</b>	11

<b>CHAPTER THREE CONSTRUCTION AND APPLICATIONS</b>	
3.1 Introduction	13
3.2 Generating Power	13
3.2.1 Preference for Electricity	14
3.2.2 Comparison of Sources of Power	15
3.2.3 Sources for Generation of Electricity	16
3.3 step cycle	19
3.3.1 Stance Phase	20
3.3.1.1 Initial Contact	20
3.3.1.2 Mid Stance	21
3.3.1.3 Propulsion	21
3.3.2 Swing Phase	21
<b>CHAPTER FOUR CIRCUIT DIAGRAM</b>	
4.1 Introduction	23
4.2 components	23
4.2.1 servo motor	23
4.2.2 Batteries	25
4.2.3 Rectifier	28
<b>4.2.4.2.3.1</b> Step-up Dc choppers	30
4.2.4 SSHI Method	30
4.2.5 Super Capacitor	30
<b>4.2.4.2.6</b> Regulator	31
<b>4.2.4.2.7</b> LED	33
4.3 Electrical circuit:	35

4.3.1 Boost convertor	36
4.4 Project Calculation	37
4.5 Project worke	37
CHAPTER FIVE CONCLUSION AND RECOMMENDATIONS	
5.1 Conclusion:	39
5.2 Recommendations:	39
5. <b>RREFERENCES</b>	41



## LIST OF FIGURES

2.1	Inside The Piezoelectric Shoes	5
2.2	The Harvester Shoe Design	7
2.3	The Crystal Shoe Design	8
2.4	Rotary Generator Shoes	10
3.1	Thermal Energy	16
3.2	Hydro-Electric Energy	17
3.3	Wind Energy	18
3.4	Fuel Cells Energy	18
3.5	Photo Voltaic Cells Energy	19
3.6	Gait Cycle	20
4.1	The Servo Motor	24
4.2	AC To DC Conversion	29
4.3	Sshi Method	30
4.4	Super Capacitor	31
4.5	Regulator	33
4.6	LED Lamp	35
4.7	The Electrical Circuit	35
4.7	The Boost Convertor	36
4.8	The Project Design	38

## LIST OF TABLES

4-1	Voltage And Current Testing	37
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## List of Abbreviations

SSHI	synchronized switch harvesting of inductor
VRLA	Valve regulated lead acid
UPS	Uninterruptible power supplies
NICAD	Nickel cadmium
NIMH	Nickel metal hydride
SCSPC	Self charging super capacitor